GRAHAM BROCK, INC.

BROADCAST TECHNICAL CONSULTANTS

May 16, 1996

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FEDERAL COMMUNICATIONS COMMISSION OFFICE OF SECRETARY

Mr. William F. Caton Acting Secretary Federal Communications Commission 1919 M Street, NW Washington, DC 20554

DOCKET FILE COPY ORIGINAL

RE: MM Docket No. 96-58

Amendment of Parts 73 and 74

Dear Mr. Caton:

Enclosed are an original and seven copies of the "Comments" in the above referenced docket. Should any questions arise concerning the enclosed, please communicate with either of the undersigned.

Sincerely,

R. Stuart Graham, Jr.

President

Graham Brock, Inc.

Jefferson G. Brock Vice-President Graham Brock, Inc.

RSG/JGB/mm Enclosures

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Before the FEDERAL COMMUNICATIONS COMMISSION Washington, D.C. 20554

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In the Matter of)	FEDERAL COMMUNICATIONS COMMISSIO: OFFICE OF SECRETARY
Amendment of Parts 73 and 74)	
of the Commission's Rules to)	MM Docket No. 96-58
Permit Certain Minor Changes in Broadcast)	
Facilities Without a Construction Permit)	

COMMENTS

- 1. These Comments are being submitted by Graham Brock, Inc. ("GBI"), a Broadcast Technical Consulting firm and are in response to the Commission's Notice of Proposed Rule Making ("Notice") in MM Docket #96-58. The Commission is soliciting comments regarding proposed changes to Part 73 and 74 of its rules to allow broadcast stations (FM and TV) to make certain changes in their respective facilities without first obtaining a construction permit. The Notice outlines numerous proposals involving changes to the rules and requested comments on these proposals, as well as other changes which might be made.
- 2. Increases in Effective Radiated Power (ERP) for Non-Grandfathered and Non-Contour Protection FM Commercial Stations. ...modify 47 C.F.R. §73.1690 to eliminate the requirement for a Form 301 application for FM commercial stations increasing ERP only. In cases where the power increase of a station may for the first time overlap with a commonly owned station in the same service, but would not violate the Commission's ownership rules, a multiple ownership compliance study could be submitted as an exhibit with the license application. This study would demonstrate compliance with §73.3555 of the rules. This may be a case where automatic program test could be withheld, pending a preliminary review.
- 3. Program Test Operation for FM Stations with Directional Antennas. ...relax 47 C.F.R. §73.1620 to permit FM stations holding a directional construction permit to commence operations at an ERP corresponding to either (a) half power or (b) the

authorized ERP corresponding to the deepest null of the directional pattern, whichever is greater. We agree with this proposal which would allow a permittee to commence operation with a directional antenna system without awaiting a grant of program test authority. This proposal would help broadcasters implement their facilities faster. In the case of an existing station proposing a directional antenna to implement an upgrade, the directional antenna may actually displace an older non-directional antenna. If the directional antenna were used at the old antenna's effective radiated power, a significant loss of coverage would likely result. We suggest the Commission indicate on the underlying permit the power at which the antenna system may operate, pending program test authority. This will eliminate any confusion on the part of the permittee trying to determine at what power to operate the station.

- 4. Replacing One FM or Television Directional Antenna with Another. ...modify the program test authority rule 47 C.F.R. §73.1690 and the transmission systems rule 47 C.F.R. §73.1690 to permit requests for such changes on a modification-of-license application on FCC Forms 302-FM or 302-TV. We agree this change would be consistent with the spirit of this rulemaking and we support the proposal to allow the replacement of one directional antenna with another without filing an application for construction permit (provided the envelope pattern is maintained). Further, we are in agreement that a modification of §73.316 should likewise be made to require FM measured composite pattern fill 85% or more of FM directional composite pattern.
- 5. We suggest that it would also seem prudent that a modification of §73.316(c)(1) be considered. Specifically we suggest amending the section by deleting the requirement to specify the actual manufacturer and model number of the proposed directional antenna when a composite envelope pattern is submitted. In many cases, the proposed envelope pattern is a theoretical maximum directional pattern based on specific limitations imposed on the subject station by other authorized or proposed facilities. The theoretical pattern is usually a hybrid of a previous measured pattern. Due to the inherent delay in obtaining actual measured patterns from the various manufacturers and the need in most cases to submit applications during a filing window, the pattern submitted is usually a composite envelope pattern based on the specific limits of the station. We have in the past consulted with various manufacturers regarding the practicality of

manufacturing an antenna system to comply with the proposed pattern (prior to filing) to insure the envelope maximums are not exceeded. Due to the costs involved with the measurement and construction of directional antenna systems, the applicant generally awaits final approval of its application prior to selecting (and ordering) a system capable of meeting the envelope requirements. In compliance with \$73.316(c)(1) of the rules, we have indicated the proposed manufacturer and model number of the system. However, in many cases, the final antenna system, as installed by the station and submitted to the Commission for licensing, may be a completely different system, although within the required envelope of the originally submitted pattern. This proposal is in concert with the proposal being considered herein to replace one directional antenna system for another, without first obtaining a construction permit.\(^1\) Since the use of composite envelope patterns has been used for years for FM directional antenna systems, which do not necessarily reflect a final measured pattern, the requirement to specify the manufacturer and model of the antenna in the initial application for construction permit is irrelevant. Currently \\$73.316(c)(1) states:

1. A complete description of the proposed antenna system, including the manufacturer and model number of the proposed directional antenna. It is not sufficient to label the antenna with only a generic term such as "dipole." A specific model number must be provided. In the case of individually designed antennas with no model number, or in the case of a composite antenna composed of two or more individual antennas, the antenna must be described as a "custom" or "composite" antenna, as appropriate. A full description of the design of the antenna must also be submitted.

We propose the paragraph be changed as follows:

1. A complete description of the proposed antenna system, including the anticipated type of radiator (horizontal/vertical dipole, circularly polarized, panel antenna, {FCC type numbers could also be specified}) and proposed number of bays of the directional antenna must be submitted. The submitted composite pattern must comply with \$73.316(c)(2). Alternately applicants may submit an actual measured pattern complying

In the proposal to substitute one directional antenna system for another at a currently licensed, the actual measured pattern of the proposed antenna system must be submitted, since the station has already ordered, tested and installed the replacement antenna.

with §73.316(c)(2), including the manufacturer and model number of the antenna. It is not sufficient to label the antenna with only a generic term such as "dipole.". In the case of individually designed antennas with no model number, or in the case of a complex antenna composed of two or more individual antennas, the antenna must be described as a "custom" antenna, as appropriate. A full description of the design of the antenna must also be submitted.

- 6. We further propose modification to \$73.316(c)(4). We feel this is an antiquated regulation applicable only to antennas proposing beam tilt and/or null fill. As a practical matter, if a station is allowed to arbitrarily replace "one FM or television directional antenna with another", a requirement to demonstrate the vertical radiation characteristics of the originally proposed antenna system are meaningless. Currently \$73.316(c)(4) states:
 - (4) Sufficient vertical patterns to indicate clearly the radiation characteristics of the antenna above and below the horizontal plane. Complete information and patterns must be provided for angles of $\pm 10^{\circ}$ from the horizontal plane and sufficient additional information must be included on that portion of the pattern lying between $\pm 10^{\circ}$ and the zenith and $\pm 10^{\circ}$ and the nadir, to conclusively demonstrate the absence of undesirable lobes in these areas. The vertical plane pattern must be plotted on rectangular coordinate paper with reference to the horizontal plane. In the case of a composite antenna composed of two or more individual antennas, the pattern required is that for the composite antenna, not the patterns for each of the individual antennas.

We propose modifying \$73.316(c)(4) to read:

(4) In the event of a directional antenna specifying beam tilt and/or null fill, sufficient vertical patterns to indicate clearly the radiation characteristics of the antenna above and below the horizontal plane. Complete information and patterns must be provided for angles of $\pm 10^{\circ}$ from the horizontal plane and sufficient additional information must be included on that portion of the pattern lying between $\pm 10^{\circ}$ and the zenith and $\pm 10^{\circ}$ and the nadir, to conclusively demonstrate the absence of undesirable lobes in these areas. The vertical plane pattern must be plotted on rectangular coordinate paper with

reference to the horizontal plane. In the case of a composite antenna composed of two or more individual antennas, the pattern required is that for the composite antenna, not the patterns for each of the individual antennas.

- 7. Likewise we propose a modification of §73.685(f)(4). Using presently available technology, the requirement to submit dBk patterns as well as dBk tabulations is unnecessarily burdensome. And as a practical matter, if a station is allowed to arbitrarily replace "one FM or television directional antenna with another", a requirement to demonstrate the vertical radiation characteristics of the originally proposed antenna system are meaningless. Currently §73.685(f)(4) states:
 - (4) Horizontal and vertical plane radiation patterns showing the effective radiated power, in dBk, for each direction. Sufficient vertical plane patterns must be included to indicate clearly the radiation characteristics of the antenna above and below the horizontal plane. In cases where the angles at which the maximum vertical radiation varies with azimuth, a separate vertical radiation pattern must be provided for each pertinent radial direction.

We propose to modify §73.685(f)(4) as follows:

(4) In the event of a directional antenna specifying beam tilt and/or null fill, sufficient vertical plane patterns must be included to indicate clearly the radiation characteristics of the antenna above and below the horizontal plane. In cases where the angles at which the maximum vertical radiation varies with azimuth, a separate vertical radiation pattern must be provided for each pertinent radial direction.

We welcome the staff's input into alternate changes to these sections with an eye toward deleting the requirement for the manufacturer and model of the antenna system to be designated in the initial application for construction permit and eliminating the requirements for dBk (TV applications) and vertical plane patterns (TV and FM applications).

- 8. Deletion of Contour Protection Status for FM Commercial Stations. ...modify 47 C.F.R. §73.1690 to permit short-spaced licensees and permittees authorized pursuant to the contour protection rule to remove the contour protection station designation. While we agree with the spirit of this proposal, we do have a concern about the deletion of contour protection status and how that may impact other stations. The proposed change would allow a station, which had been authorized pursuant to §73.215 to delete this designation when the station(s) which caused this condition was no longer a factor by having moved to a fully spaced site or changed channels. This deletion may preclude another station from implementing a change despite the applications being processed under a first come-first served basis. For example: Station A (4.5 kilowatts @ 100 meters HAAT) becomes a fully spaced facility because Station B changes sites. Station C files an application for a minor change relocating to a site which does not meet §73.207 spacing towards Station A, but invokes §73.215 and protects Station A to 4.5 kilowatts. Station A commences operation at 4.5 kilowatts as a fully spaced facility under Automatic Program Test Authority.² Station C files its minor change one day prior to the Commission receiving the license modification for Station A.³ Does Station A now lose its ability to delete contour protection and must they return to their previous operation? Alternatively, if Station A files one day ahead of Station C is the minor change application now deferred pending an amendment or unconditionally returned as unacceptable?
- 9. We are concerned that, on a first come-first served basis, a station may expend considerable money and resources to implement what they consider to be an automatic increase yet are precluded from operating the facility due to factors beyond their control. It is, therefore, more appropriate to require stations to submit Form 301 (which requires less resources) and be awarded a construction permit before implementing a change from \$73.215 status to a fully spaced facility status.⁴
- 10. GBI also supports the other proposed changes indicated in the notice, since each would allow a faster approach to making changes for facilities. We do, however, wish to make some additional suggestions for changes which might be allowed without a construction permit application and should be considered during the modification process.

²⁾ Station A could potentially increase effective radiated power to 6.0 kilowatts at this time following other provisions of this proposal.

³⁾ Under current automatic program test rules, Station A has 10 days to notify the Commission of the modified facility.

⁴⁾ The 301 application for construction permit could also be used to increase to maximum class facilities.

OTHER COMMENTS

- 11. Further, in light of the forthcoming registration of antenna towers around the country as part of WT Docket #95-5, we also suspect there will be many cases where incorrect data and authorizations regarding existing towers may force broadcasters to file applications to correct that data. This eventuality was touched on in the Report and Order in the above docket. The Commission indicated that it would allow licensees to correct the data relating to their respective facilities by filing the appropriate Form 301 application. Based on the changes proposed in this instant docket, it is possible that an impacted licensee could simply file a license modification application to address some of the possible changes. One of these changes would be a correction of the geographic coordinates. We have found that most of the corrections of tower coordinates we have seen in the last few years were a change of two to three seconds. In the case of some AM stations, a correction to the licensed data was facilitated through a modified license application. As part of this modification process, a correction of coordinates of up to three seconds may be accommodated through a license modification, rather than the filing of an application for construction permit, provided no other change occurred (site elevation, tower structure height, antenna radiation center (AGL)). This correction would need to be accompanied by a Determination of No Hazard from the FAA for the revised data (as well as a change to the tower registration information). If the tower location data is changing by more than three seconds or the site elevation data or other parameter is impacted by the correction, the more formal Form 301 application would then be necessary.
- 12. The notice also proposes to clarify certain policies and often asked questions which the staff receives. We noted the notice indicated the manner in which waivers of the main studio rules must be filed with the Commission. In numerous cases over the past years, we have demonstrated compliance with §73.315(a) regarding coverage of the community of license (or in some cases main studio coverage) utilizing an alternate method of predicting the location of the city grade contour, based on Technical Note 101 methodology. In these cases, the supplemental showing was reviewed by the staff to determine whether the terrain in one or more directions from the antenna site departs widely from the average elevation of the 3 to 16 kilometer sector. If that is the case, the prediction method may indicate contour distances that

are different from what may be expected in practice. The policy required a minimum of a 10% change to utilize the alternate method of prediction. Once this threshold was met the proposal was referred to the Office of Engineering Technology for evaluation and confirmation. As a matter of clarification, we wish to verify the supplemental city grade analysis for an FM station does not constitute a waiver of the rules and, therefore, does not require a minor change fee should it be utilized outside of an application for construction permit.

These comments were prepared by Graham Brock, Inc. We have tried to be accurate in the preparation of these comments. These comments are true and accurate to the best of our belief and knowledge.

Respectfully submitted by Graham Brock, Inc.

R. Stuart Graham, Jr., President

Jefferson G. Brock, Vice-President